

B.A/B. Sc. Compute Application
SEMESTER – III

Course type	Paper Title	Hours per week	Marks	
DSC-3	Object Oriented Programming with C++	Theory: 04	Internal	external
		Credit: 04	20	80

Unit-I

Principles of Objective Oriented Programming Object Oriented Programming Paradigm, Basic Concepts of Object Oriented Programming, Benefits of Object Oriented Programming, Object Oriented Languages, Applications of Object Oriented Programming, Beginning with C++. **Token Expressions & Control Structures:** Tokens, Keywords, Identifiers and Constants, Data Types, Type Compatibility, Variables, Operators in C++, Implicit Conversions, Operator Overloading, Operator Precedence, Control Structures.

Unit-II

Functions in C++, Classes & Objects: The Main Function, Function Prototyping, Call by Reference, Return by Reference, Inline Functions, Function Overloading, Friend and Virtual Functions. Specifying a class, Member Functions, Arrays with in a class, Static Member Functions, Arrays of Objects, Friendly Functions.

Unit-III

Constructors & Destructors, Operator Overloading, Inheritance: Constructors Parameterized Constructors, Copy Constructors, Dynamic Constructors, Destructors, Defining Operator Overloading, Overloading Operators, and Rules for Overloading Operators, Type Conversions. Inheritance: Single Inheritance - Multilevel Inheritance - Multiple Inheritance - Hierarchical Inheritance - Hybrid Inheritance.

Unit-IV

Pointers, Virtual Functions & Polymorphism, Working with Files, Exception handling Pointers, Pointers to Objects, this pointer, Pointer to Derived Classes, Virtual Functions, Classes for File Stream Operations, Opening and Closing a File, File Modes, File Pointers, Input Output Operations, Updating a File.

Reference Books:

1. Object Oriented Design by Rumbaugh (Pearson publication)
2. Object-oriented programming in Turbo C++ By Robert Lafore ,Galgotia Publication.
3. Object-oriented programming with C++ by E.Balagurusamy, 2ndEdition, TMH.

Course type	Paper Title	Hours per week	Marks	
DSC-3	Object Oriented Programming with C++ Lab	Practical: 02	Internal	external
		Credit: 01	--	25

1. Write a Program to find the sum of two numbers using function.
2. Write a Program to find Simple Interest and Compound Interest.
3. Write a Program to demonstrate the working of following Loops: While, Do While, For, If-Else, switch
4. Write a Program to find greatest of three numbers.
5. Write a Program to check whether a number is even or odd.
6. Write a Program to check whether a year is leap year or not.
7. Write a Program to add and subtract two matrices.
8. Write a Program to display elements of an array.
9. Write a Program to calculate Sum and Average of an array.
10. Write a Program to sort elements of an array using Bubble sort.
11. Write a Program to calculate Factorial of a number.
12. Write a Program to check whether a given number is Prime or not.
13. Write a Program to generate Fibonacci series.
14. Write a Program to show function Overloading.
15. Write a Program to create a class and access member function of a class
16. Write a program to show Constructor and Destructor in a class
17. Write a program to convert the temperature in Fahrenheit to Celsius and vice-a-verse
18. Write a program to show the concept of Single inheritance in classes.